## WHAT IS CLAIMED IS:

A pressure transmitter for a clean environment, the pressure transmitter comprising:

- a process coupling coupleable to a source of process fluid;
- a pressure sensor module coupled to the process coupling for fluidic communication with the process fluid, the pressure sensor module having an electrical characteristic that varies with process fluid pressure;
- measurement circuitry operably coupled to
  the pressure semsor module, the
  measurement circuitry being adapted to
  provide a signal based upon at least
  one measurement of the electrical
  characteristic

measurement circuitry and adapted to provide pressure-related information to a process control loop; and wherein the pressure transmitter further comprises a weld ring welded to the process coupling and disposed about the pressure sensor module to provide a secondary seal for the process fluid, the weld ring extending outwardly from an outer diameter of

the weld ring.

- 2. The transmitter of claim 1, wherein the weld ring is adapted to couple to a housing.
- 3. The transmitter of claim 1, wherein the weld ring is constructed type 316L ferrite #3-10 stainless steel.
- /4. A pressure transmitter for a clean environment, the pressure transmitter comprising: a process coupling coupleable to a source of process fluid;
  - a pressure sensor module coupled to the process coupling for fluidic communication with the process fluid, the pressure sensor module having an electrical characteristic that varies with process fluid pressure;
  - measurement circuitry operably coupled to

    the pressure sensor module, the

    measurement circuitry being adapted to

    provide a signal based upon at least

    one measurement of the electrical

    characteristic;
  - communication circuitry coupled to the

    measurement circuitry and adapted to

    provide pressure-related information

    to a process control loop; and

    wherein the pressure sensor module further

    includes:

- an isolator diaphragm positioned
   to contact the process
   fluid;
- a deflectable sensor diaphragm

  pressure sensor disposed

  within the pressure sensor

  module; and
- filler material disposed between
  the isolator diaphragm and
  the sensor diaphragm,
  wherein the filler material
  is constructed from an
  elastomer.
- 5. The transmitter of claim 4, wherein the elastomer is polyurethane.
- 6. The transmitter of claim 5, wherein the polyurethane filler material is polyether aromatic polyurethane.
- 7. The transmitter of claim 5, wherein the filler material is ST-1890-91 polyurethane.
- 8. The transmitter of claim 5, wherein the filler material is ST-1880-87 polyurethane.

9. The transmitter of claim 4, wherein the filler is bonded to both the isolator diaphragm and the sensor diaphragm.

10. A pressure sensor module for a pressure transmitter, the pressure sensor module comprising:

a header assembly;

a deflectable sensor diaphragm mounted relative to the header assembly, the deflectable sensor diaphragm having at least one element disposed on the diaphragm having an electrical characteristic that varies with diaphragm deflection;

an isolator diaphragm coupled to the header assembly and adapted for contact with process fluid, the isolator diaphragm operable coupled to the deflectable sensor diaphragm; and

am elastomeric filler material interposed between the isolator diaphragm and the deflectable sensor diaphragm.

- 11. The transmitter of claim 10, wherein the elastomer is polyurethane.
- 12. The transmitter of claim 10, wherein the polyurethane filler material is polyether aromatic polyurethane.

- 13. The transmitter of claim 12, wherein the filler material is ST 1890-91 polyurethane.
- 14. The transmitter of claim 12, wherein the filler material is \$T 1880-87 polyurethane.
- 15. The transmitter of claim 10, wherein the filler is bonded to both the isolator diaphragm and the sensor diaphragm.
- 16. A pressure transmitter for a clean environment, the transmitter comprising:
  - a process coupleable to a source of process
    fluid;
  - means for sensing process fluid pressure,
    the means for sensing coupled to the
    process coupling;
  - measurement circuitry coupled to the

    pressure sensing means, the

    measurement circuitry being adapted to

    provide a signal based upon at least

    one measurement of an electrical

    characteristic of the pressure sensing

    means; and
  - a communication circuit coupled to the measurement circuitry and adapted to provide pressure-related information over a process control loop.

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